Programme Specification

Stem Cells, Development and Regenerative Medicine (2020-21)

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	1
Accreditation details	None
Final award	Master of Research (MRes)
Name of award	Stem Cells, Development and Regenerative Medicine
Interim Exit awards	Postgraduate Certificate in Higher Education
	Postgraduate Certificate in Higher Education
	Postgraduate Diploma in Higher Education
	Postgraduate Diploma in Higher Education
FHEQ level of final award	Level 7
UCAS code	
Programme code	7009
QAA Subject Benchmark or other external reference	
Programme Lead	Franchesca Houghton

Programme Overview

Brief outline of the programme

The programme offers the opportunity to develop advanced scientific, research and transferable skills required to become an independent researcher in Stem Cells, Development & Regenerative Medicine.

Students will undertake taught modules in Research Skills in Biomedical Sciences 1, Stem Cells, Development & Regenerative Medicine, and Advanced Scientific Skills. Students will also undertake two research projects to develop a broad range of laboratory skills and experience working in different research environments. The students will develop core research skills including critical appraisal, scientific writing, written, oral and poster

presentation, statistical analysis and a range of key techniques used in Translational Biomedical research. The programme leads to an MRes in Stem Cells, Development & Regenerative Medicine.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

Learning and teaching

A blend of learning and teaching methods are used in order to help students develop a broad range of skills. In the Stem Cells, Development & Regenerative Medicine module students are introduced to core concepts through a series of facilitator-led workshops focussing on key research publications. Students will be asked to critically appraise primary research papers and develop the skills required to understand, critique and interpret research findings. Integral to these workshops is the requirement for students to present their thoughts and participate in group discussions with both their peers and academic facilitators. The research skills in biomedical sciences (RSBS1) module uses a combination of taught and practical sessions to introduce students to the core concepts underlying statistical analysis and study design supporting students in handling their own data and critically appraising data published by others. In the Advanced Scientific Skills Module a series of taught and practical sessions will introduce students to additional core concepts used in Biomedical Sciences such as handling large data sets. In addition, key principles required to relay research to both a scientific and lay audience will be introduced. Students will be asked to write both a scientific and lay abstract for a published primary paper, to give a research presentation suitable for a lay audience and prepare a research grant proposal. Thus, students will develop the skills required to communicate their research to both scientists and non-specialists. In the two research projects, students will be introduced to a range of laboratory skills gaining valuable practical experience of research methodology, experimental design, data interpretation, scientific writing, oral and poster presentations.

Assessment

Each module will be assessed as outlined in the individual module descriptions. Assessments include written assignments, oral presentations, poster presentations, viva voce. The MRes in Stem Cells, Development and Regenerative Medicine may be awarded as a Pass, Merit or Distinction level.

Special Features of the programme

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

Educational Aims of the Programme

The aims of the programme are to: The programme aims to provide advanced professional training leading to the appropriate practical and analytical skills required to pursue independent research in Stem Cells, Development & Regenerative Medicine. The programme will be intellectually led while paying close attention to practical training in state-of-the-art technologies. Advanced courses in specific areas of stem cell biology and their translational potential will develop your understanding of regenerative medicine. Research projects undertaken in leading stem cell laboratories will allow you to establish a broad base of technical expertise and first-hand experience of data generation, analysis and interpretation. Generic training in research skills, statistics plus a strong emphasis on critical analysis in the advanced courses will allow you to evaluate, integrate, update and articulate knowledge at the cutting edge of your field. The Advanced Scientific Skills Module will introduce students to additional core concepts used in medical research such as handling large data sets and how to prepare a research grant proposal. In addition, key principles required to communicate scientific research to

both scientists and non-specialists will be developed.

The aims of the programme are to:
· Provide advanced courses with which to develop your knowledge and analytical skills in specific areas of stem cell science and regenerative medicine.
· Enable you to become competent in a broad range of state-of-the-art biomedical techniques.
· Undertake critical evaluation of current research, propose new hypotheses and evaluate methodologies.
· Encourage you to scrutinise and debate issues related to research design, instrument selection and the evidence base for currently held ideas.
· Undertake research utilising sound methodological principles, which are appropriate to the advancement of scientific understanding and the promotion of new approaches to the treatment of disease and illness.
· To apply knowledge, analytical and critical thinking skills to develop sound judgements about data and to integrate research evidence into all aspects of model making and hypothesis building.
· Enable you to justify personal and professional decisions through critical evaluation and synthesis of relevant theories, empirical evidence and personal research experience.
· To present your own research findings, as well as those of others in a lucid and scholarly manner.
· To enable you to become competent in communicating your research to both a scientific and lay audience.

Programme Learning Outcomes

Having successfully completed this programme you will be able to demonstrate knowledge and understanding of:

Knowledge and Understanding

On successful completion of this programme you will have knowledge and understanding of:

A1.   The practical issues involved in carrying out research

A2.   The value, nature, uses and limitations of a range of research methods

A3.   Research governance, ethics and data protection principles in scientific research

A4.   The identification and justification of the value of different sources of data in drawing conclusions from published literature

A5.   The molecular mechanisms regulating stem cell biology and how stem cells can be utilised for regenerative medicine

Teaching and Learning Methods

Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment Methods

Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation of research project, viva.

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

B1.   Gather, analyse, synthesise, critically evaluate and interpret complex information

B2.   Apply scientific and clinical concepts to the development of new ideas and the synthesis of hypotheses

B3.   Analyse problems objectively using key theoretical perspectives and empirical research

B4.   Devise valid and reliable methods and instruments for data and information collection in relation to your own research

B5.   Demonstrate and exercise independence of mind and thought

B6.   Defend your research findings in the context of already published work and established paradigms

B7.   Communicate your research effectively to both lay and scientific audiences

Teaching and Learning Methods

Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment Methods

Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation pf research project, viva voce.

Transferable and Generic Skills

On successful completion of this programme you will be able to:

C1.   Work effectively, independently and with others in groups to achieve identified tasks

C2.   Identify your personal learning needs effectively and develop personal development plans appropriate to your career aspirations

C3.   Use information technology e.g. web/internet, databases, spreadsheets, statistical packages and word processing effectively

C4.   Present, discuss and defend ideas, concepts and views effectively through written and spoken language

C5.   Manage a research project with due attention to time and resource management

C6.   Communicate your research effectively to both lay and scientific audiences

C7.   Write effectively for both lay and scientific audiences

Teaching and Learning Methods

Interactive lectures, student and tutor led seminars, journal club presentations, poster presentation, peer review, independent research, individual research supervision.

Assessment Methods

Literature reviews, research proposal, journal club presentations- critical discourses, research project report, research project manuscript, poster and oral presentation pf research project, viva voce.

Subject Specific Practical Skills

On successful completion of this programme you will be able to:

D1.   Analyse and reflect critically on your professional role in your area of research

D2.   Apply investigative skills/methods of enquiry to researching problems and issues in your area of research

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

Part I

The 12 month programme will lead to an MRes in Stem Cells, Development & Regenerative Medicine. The programme is modular in structure (Figure 1). Modules are either 10, 20, 30 or 60 CATS credits at level 7. Each module has its own aims, learning outcomes and assessment criteria. A total of 180 CATS credits must be successfully completed during the year which will consist of two research project modules, modules in Stem Cells, Development & Regenerative Medicine, Research Skills for Biomedical Sciences 1 and Advanced Scientific Skills. Each of the 2 research project modules (1 & 2) will normally be expected to be performed with a different supervisor in a different research laboratory.

The MRes in Stem Cells, Development & Regenerative Medicine is offered as a full-time course. It should be completed in a 12 month period commencing in October of any given year. Should students fail any of the assessed modules, one further attempt will be allowed. Should the student be permitted a repeat year this must be undertaken internally. All modules must be passed to gain the Master of Research award.

The pass mark for each module is 50%.

Exit Awards:
Students who have not obtained 90 ECTS may be eligible for a PGCert or a PGDip award. To be eligible for an exit award students must meet one of the following criteria:
1) PGCert in Research Methods: 35-40 ECTS comprised of 30 ECTS from either MEDI6225 or MEDI 6222 and either MEDI6232 (5ECTS) OR MEDI6224 (15ECTS)
2) PGCert in the Theory of Stem Cells, Development and Regenerative Medicine: 30 ECTS from MEDI6232, MEDI6224 & MEDI6223
3) PGDip in Research Methods: 65-80 ECTS comprised of MEDI6225 (30 ECTS), MEDI6222 (30ECTS) and either MEDI 6232 (5ECTS) OR MEDI6224 (15ECTS)
4) PGDip in Stem Cells, Development and Regenerative Medicine: 60ECTS from MEDI6232, MEDI6222, MEDI6223 and

either MEDI6225 OR MEDI6222

Part I Core

Code	Module Title	ECTS	Type
MEDI6224	Advanced Scientific Skills 2020-21	15	Core
MEDI6225	Research Project 1 2020-21	30	Core
MEDI6222	Research Project 2 2020-21	30	Core
MEDI6232	Research Skills for Biomedical Science 1 (RSBS 1) 2020-21	5	Core
MEDI6223	Stem Cells, Development & Regenerative Medicine 2020-21	10	Core

Progression Requirements

The programme follows the University's regulations for *Progression, Determination and Classification of Results : Undergraduate and Integrated Masters Programmes* and *Progression, Determination and Classification of Results: Postgraduate Master's Programmes* Any exemptions or variations to the University regulations, approved by AQSC are located in *section VI of the University Calendar*.

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:
- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV

- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides
- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

Associated with your programme you will be able to access:

· Personal computing facilities (laptop or desktop computer).
· Transferable and research skills training from the Faculty (PGR training programme, transferable skills programme) and University.
· A specific nominated Personal Academic Tutor will be available throughout the programme to give pastoral support, in addition to the Faculty pastoral advisors.
· The Personal Academic Tutor will assist tutees with their Academic Needs Analysis throughout the programme and discuss potential career paths of interest.
· The Programme Leader will support students with progress issues and decisions related to research options.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

- Completing student evaluation questionnaires for each module of the programme.
- Acting as a student representative on various committees, e.g. Staff/Student Liaison Committees, School Programmes Committee OR providing comments to your student representative to feedback on your behalf.
- Serving as a student representative on Faculty Scrutiny Groups for programme validation.
- Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group.

Further details on the University's quality assurance processes are given in the *Quality Handbook.*

Career Opportunities

Students completing the programme will have developed extensive research skills and thus will be highly competitive to undertake PhD. They will also be well placed for a career in biosciences research either inside or outside of academia. Students will also have developed a range of transferable skills and thus suitable for a career in scientific writing. Other career opportunities might include managing clinical trials, research management, or working with research funders. Throughout the programme, students are encouraged to reflect on their career development and will have access to a number of workshops provided by Careers and Employability Service to help support them with this.

External Examiner(s) for the programme

Name: Professor Kate Hardy - Imperial College London

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if they take full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Clothing	Lab Coats: These will be provided Protective Clothing: These will be provided
Computer discs or USB drives	You will be expected to provide a memory stick.
Conference expenses	Accommodation Students may have the opportunity to attend an academic conference during their studies. You may be expected to pay for the costs of any accommodation and incidental expenses directly associated with the conference. Travel Students may have the opportunity to attend an academic conference during their studies. You may be expected to pay for the costs of any travel directly associated with the conference.
Fieldwork: logistical costs	Accommodation Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any accommodation associated with the fieldwork/data collection. You would be expected to pay for incidental expenses eg. meals. Insurance Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any insurance. Students should check their own vehicle insurance to ensure they are appropriately covered for undertaking fieldwork/data collection. Travel costs Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would not normally be expected to pay for the costs of any travel associated with the fieldwork/data collection. Inter-campus travel costs You will be expected to cover the cost of occasional travel between the Southampton General Hospital and Highfield campus. The Unilink operates a regular bus service between the two sites. Immunisation/vaccination costs Depending on the nature of the research project, students may complete fieldwork/data collection at locations other than Southampton. You would normally be expected to pay for any immunisation/vaccination costs associated with overseas travel if you are located outside of the UK.
Hardware	Across all campuses and most halls of residence approximately 1700 computer workstations are available. Currently all students are provided with a desktop or laptop computer to support their studies.

Laboratory Equipment and Materials	Students will be required to pay a bench fee of £5100.
Printing and Photocopying Costs	In the majority of cases, coursework such as essays; projects; dissertations is likely to be submitted on line. However, there are some items where it is not possible to submit on line and students will be asked to provide a printed copy. University printing costs, follow link: http://www.southampton.ac.uk/isolutions/students/printing-for-students.page?
Software Licenses	No costs will be incurred when using University computer facilities.
Stationery	You will be expected to provide your own day-to-day stationery items, e.g. pens, pencils, notebooks, etc). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks	Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source.

Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module. |

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk/ .